

What is claimed is:

- 1           1.       A fluid introduction system, comprising:  
2                               an introducer configured to create a pressure of at least 69 kPa within a  
3 spine; and  
4                               an operator configured to actuate the introducer to introduce fluid into  
5 the spine according to a predetermined fluid introduction profile.
- 1           2.       The fluid introduction system of claim 1, wherein the introducer is configured  
2 to create a pressure of at least 69 kPa in an intervertebral disc.
- 1           3.       The fluid introduction system of claim 1, wherein the predetermined fluid  
2 introduction profile is the introduction of fluid at a constant rate.
- 1           4.       The fluid introduction system of claim 1, wherein the introducer is configured  
2 to introduce a repeatable amount of fluid into the spine.
- 1           5.       The fluid introduction system of claim 1, wherein the introducer is configured  
2 to introduce fluid into the spine at a repeatable rate.
- 1           6.       The fluid introduction system of claim 1, wherein the introducer is configured  
2 to introduce a non-pulsatile flow of fluid into the spine.
- 1           7.       The fluid introduction system of claim 1, wherein the introducer is configured  
2 to create a pressure of at least 150 kPa in an intervertebral disc.
- 1           8.       A fluid introduction system, comprising:  
2                               an introducer configured to introduce fluid into a spine of a patient;  
3                               an operator configured to actuate the introducer to introduce fluid into  
4 the spine of the patient;

5                           a computer readable medium having code for receiving:  
6                           fluid introduction data indicative of a fluid introduction  
7 parameter; and  
8                           response data indicative of a response of the patient at a time  
9 related to a time of the fluid introduction data.

1           9.       The fluid introduction system of claim 8, wherein the fluid introduction  
2 parameter is a pressure within an intervertebral disc of the patient at the time of the fluid  
3 introduction data.

1           10.     The fluid introduction system of claim 8, wherein the fluid introduction  
2 parameter is a total amount of fluid introduced into an intervertebral disc of the patient at the  
3 time of the fluid introduction data.

1           11.     The fluid introduction system of claim 8, wherein the fluid introduction  
2 system is configured to obtain the response data from an observation of the patient.

1           12.     The fluid introduction system of claim 8, wherein the fluid introduction  
2 system is configured to obtain the response data upon a response by the patient.

1           13.     The fluid introduction system of claim 8, wherein the introducer is configured  
2 to create a pressure of at least 100 kPa within the spine.

1           14.     A fluid introduction system, comprising:  
2                           an introducer configured to introduce a non-pulsatile flow of fluid into  
3 a spine, the introducer having a flow rate-dependent impedance opposing the introduction of  
4 the fluid; and  
5                           an operator configured to actuate the introducer, the operator including  
6 code to control the actuation of the introducer based at least in part upon impedance data  
7 indicative of the impedance.

1           15.     The fluid introduction system of claim 14, wherein the introducer includes an  
2 identifier including the impedance data and the operator is configured to receive the  
3 impedance data from the identifier of the introducer.

1           16.     The fluid introduction system of claim 14, wherein the operator includes code  
2 to determine the impedance data based upon an actuation of the introducer.

1           17.     The fluid introduction system of claim 16, comprising:  
2                   a pressure sensor configured to provide pressure data indicative of a  
3 pressure of fluid present in the introducer;  
4                   a fluid introduction sensor configured to provide fluid introduction  
5 data indicative of at least one of (a) a rate of fluid introduction and (b) an amount of fluid  
6 introduced into the portion of the spine; and  
7                   wherein the operator includes code to determine the impedance data  
8 based upon the pressure data and the fluid introduction data.

1           18.     The fluid introduction system of claim 14, wherein the introducer is  
2 configured to create a pressure of at least 69 kPa within the spine.

1           19.     A fluid introduction system, comprising:  
2                   a first introducer configured to introduce fluid into a first portion of a  
3 spine;  
4                   a second introducer configured to introduce fluid into a second,  
5 different portion of a spine and  
6                   an operator configurable to concurrently actuate the introduction of  
7 fluid into the first portion of the spine by the first introducer and the introduction of fluid into  
8 the second portion of the spine by the second introducer.

1           20.     The fluid introduction system of claim 19, wherein the first and second  
2 portions of the spine are first and second different intervertebral discs.

1           21.     The fluid introduction system of claim 20, wherein the first and second  
2     introducers are configurable to provide a simultaneous pressure of at least 69 kPa in each of  
3     the first and second intervertebral discs.

1           22.     The fluid introduction system of claim 19, wherein the first and second  
2     introducers are actuatable independently of one another.

1           23.     A fluid introduction system, comprising:  
2                     an introducer configured to introduce a fluid having a dynamic  
3     viscosity of at least 750 Pa into a spine; and  
4                     an operator configured to actuate the introducer according to a  
5     predetermined introduction profile.

1           24.     The fluid introduction system of claim 23, wherein the fluid is a polymeric  
2     fluid.

1           25.     The fluid introduction system of claim 23, wherein the fluid is a non-  
2     Newtonian fluid.

1           26.     The fluid introduction system of claim 23, wherein:  
2                     the introducer has an impedance that opposes the actuation of the  
3     introducer, the impedance being dependent upon the viscosity of the fluid; and  
4                     the fluid introduction system is configured to obtain impedance data  
5     indicative of the dynamic viscosity of the fluid.

1           27.     A method for introducing fluid, comprising:  
2                     positioning a first introducer in a first portion of a spine;  
3                     positioning a second introducer in a second, different portion of the  
4     spine;  
5                     without removing the first and second introducers:  
6                     introducing fluid into the first portion of the spine with the first  
7     introducer; and

8                                   introducing fluid into the second portion of the spine with the  
9   second introducer.

1           28.    The method of claim 27, wherein the first and second portions of the spine are  
2   different intervertebral discs.

1           29.    The method of claim 27, wherein introducing fluid into the first portion of the  
2   spine includes creating a pressure of at least 69 kPa in the first portion of the spine and  
3   introducing fluid into the second portion of the spine includes creating a pressure of at least  
4   69 kPa in the second portion of the spine.

1           30.    The method of claim 27, wherein introducing fluid into the first portion of the  
2   spine at least partially overlaps introducing fluid into the second portion of the spine.

1           31.    The method of claim 27, wherein introducing fluid into the first portion of the  
2   spine is performed before introducing fluid into the second portion of the spine.

1           32.    A syringe comprising:  
2                   a reservoir;  
3                   a plunger slidable with respect to the reservoir to apply pressure to  
4   fluid therein; and  
5                   a pressure transducer secured with respect to the plunger and  
6   configured to be in direct contact with fluid in the reservoir.

1           33.    The syringe of claim 32, wherein a receivable portion of the plunger is  
2   receivable within the reservoir and the syringe comprises a cap secured with respect to the  
3   receivable portion of the plunger, the pressure transducer being disposed between at least a  
4   portion of the cap and at least a portion of the receivable portion of the plunger.

1           34.    The syringe of claim 33, wherein the cap comprises a hole configured to allow  
2   fluid present within the reservoir to contact the pressure transducer.

1           35.     The syringe of claim 33, wherein the cap and the plunger are not rotatable  
2     with respect to one another when the cap is secured with respect to the receivable portion of  
3     the plunger.

1           36.     The syringe of claim 35, wherein the cap and the receivable portion of the  
2     plunger each comprise an asymmetrical portion, the asymmetrical portions of the cap and  
3     plunger mating with one another to secure the cap with respect to the plunger.

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